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This Week's Citation Classic

Hoffman B F & Cranefield P F. *Electrophysiology of the heart.*
New York: McGraw Hill, 1960. 323 p.
[Dept. Physiology, Coll. Medicine, State Univ. New York Downstate Med. Ctr., Brooklyn. NY)

The first comprehensive monographic review of the then new field of the study of the electrophysiology of the heart by intracellular recording, this monograph has appeared in Russian and Japanese and remains in print in English 20 years after its initial publication. [The *SCI*® indicates that this book has been cited over 1,380 times since 1961.]

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Two events in the period 1949-1952 profoundly affected the field of electrophysiology: the introduction of the intracellular microelectrode by Gilbert Ling and Ralph Gerard and the development of. an ionic theory of the action potential by Bernard Katz, Alan Hodgkin, and Andrew Huxley. These events immediately affected cardiac electrophysiology; the 1950s produced many important studies of the shape of the action potential in different parts of the heart, of the origin and spread of electrical activity in the heart, of the excitability of the heart, and of the ionic basis of the cardiac action potential.

"Hoffman and I, probably in late 1956. decided to write a review article with the deliberate intention of expanding it into a monograph. The review appeared in January, 1958;' the book was completed in July.

By the end of the 1950s a great deal had been learned, yet the field could still be encompassed in a monograph of reasonable length. It is not easy to determine to what extent the success of this monograph depended on its appearing at a moment when the field was about to expand rapidly and to what extent, if any, its appearance created interest in the subject. The field certainly expanded greatly, in addition it soon took on clinical implications. In 1963 we were asked to contribute to an important clinical journal an article reviewing abnormal rhythms of the heart in terms of the newer knowledge of the electrophysiology of the heart,[2] that article has been cited over 315 times. Another article we have written[3] that has often been cited (over 135 times) also had clinical implications. By now a whole new field called clinical electrophysiology of the heart has emerged from the clinical applications of laboratory studies made in the period 1950-1970.

"The frequent citation of our monograph is reflected in its publishing history McGraw-Hill published it in 1960 and reissued it in unaltered form in the mid 1960s. A pirated Russian translation appeared in 1962.[4] An authorized Japanese translation appeared in 1977.[5] A facsimile reissue of the 1960 monograph appeared in 1976.[6] The fact that the monograph remains in-print and continues to be cited probably reflects the fact that many basic areas in the field had been explored by the time we wrote the book so that it remains a useful introduction to the subject. It also reflects the fact that no compact and comprehensive monograph has displaced it; although one of us has since published a monograph in the area,[7] it, like other recent books in the field, deals only with a particular aspect of the subject."

1. **Cranefield P F & Hoffman B F.** Heclrophysiology of single cardiac cells, P*hysiol. Rev.* **38**:41-76. 1958.
2. **Hoffman B F & Cranefield P F. T**he physiological basis of cardiac arrhythmias. *Amer. J. Med.* ***37***:670-84. 1964.
3. **Hoffman B F, Moore E N. Stuckey J H & Cranrfield P F.** Functional prooperties of the atrioventricular. conduction system. *Ore. Res.* **13**:308-28. 1963.
4. **Hoffman B F & Cranefield P F. E***lektrofisologta cerdtsa.* Moscow: Publishing House of Foregin literature. 1962. 390p.
5. ----------. El*ectrophysiology of the heart.* Nishinomiya: Nishinomiyahoscikan. 1977. 305 p.
6. ---------- .... El*ectrophysiology of Ihe heart.* Mount kisco. NY: Futura. 1976. 323 p.
7. **Cranrfield P F.** *The conduction of the cardiac impulse. The slow response and cardiac arrhythmias.* Mount Kisco. NY: Futura.. 1975. 404 p.